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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,335	10/23/2001	Hiroyuki Fukada	214935US2PCT	6475

22850 7590 03/12/2004

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ALEXANDRIA, VA 22314

EXAMINER

AMINZAY, SHAIMA Q

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 03/12/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

PM

## Office Action Summary

**Application No.**

09/926,335

**Applicant(s)**

FUKADA, HIROYUKI

**Examiner**

Shaima Q. Aminzay

**Art Unit**

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2001.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) 7 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## ***Detailed Action***

### ***Objection***

1. Claim 7 is objected to because of the following informalities: "for calculating a facing pitch". Appropriate correction "for calculating a fading pitch" is required.

### ***Claim Rejections - 35 USC § 102***

(a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claim 1-2, 9, and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Tooru Ogino International Publication Number WO 00/02338.
3. Regarding claim 1, Ogino teaches a fading pitch detection comprising (Figure 6): a plurality of demodulators (102), connected to a shared reception system (104, and 112 for fading pitch; 104, and 106 for speech reception), each for demodulating a reception signal through each multipath (paragraph [0032], lines 9-13); a synthesizer (104) for synthesizing signals outputted from the plurality of demodulators with a phase difference in each multipath being maintained (paragraph [0032], lines 9-15); and a fading pitch detector (112) for detecting a fading pitch based upon an output signal from the synthesizer (paragraph [0032], lines 23-26).
4. Regarding claim 11, Ogino teaches all the limitations of claim 11 (see for example paragraph [0031], [0032], and [0035]).

5. Regarding claim 2, Ogino teaches claim 1, and further, teaches that the fading pitch detection is designed for a CDMA system (paragraph [0022], lines 1-4; paragraph [0025], lines 1-2), and the plurality of demodulators is a plurality of despreading devices (paragraph [0025], lines 1-10), connected to the shared reception system for performing despreading for each multipath (paragraph [0025], lines 6-19).
6. Regarding claim 9, Ogino teaches claim 1, and further teaches a mobile information terminal comprising the fading pitch detection (paragraph [0013], lines 1-5; paragraph [0020], lines 1-5; paragraph [0023], lines 1-5).

### ***Claim Rejections – 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) Patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 3-8, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tooru Ogino International Publication Number WO 00/02338.
3. Regarding claims 7, and 12, Ogino teaches a fading pitch detection apparatus (Figure 6, element 112).

Ogino does not teach specifically that the fading pitch comprising a

transforming device, an auto-correlation detector device, and a fading pitch estimation device.

However, Ogino teaches the fading pitch (112) transforming an input signal including the fading-based variation to an electrical signal and calculating the value of an output signal (paragraph [0035], lines 9-16; [0038], lines 1-15; [0043], lines 1-5), and estimating the fading pitch value (paragraph [0035], lines 16-30).

It would have been obvious to one of ordinary skill in the art at the time invention was made to utilize Ogino's modification to perform the search of arrived radio waves and calculating the fading pitch because of providing a reception that can shorten the time of operation of an arrived radio wave search circuit in a mobile terminal that perform RAKE combining and thus reduce consumption of current (paragraphs [0020], lines 1-5, [0021], lines 1-5, and [0022], lines 1-10).

4. Regarding claims 3 and 6, Ogino teaches the fading pitch (112) transforming an input signal including the fading-based variation to an electrical signal and calculating the value of an output signal (paragraph [0035], lines 9-16; [0038], lines 1-15; [0043], lines 1-5), and estimating the fading pitch value (paragraph [0035], lines 16-30); a synthesizer (104) for synthesizing signals outputted from the plurality of demodulators with a phase difference in each multipath being maintained (paragraph [0032], lines 9-15); and a fading pitch detector (112) for detecting a fading pitch based upon an output signal from the synthesizer (paragraph [0032], lines 23-26).

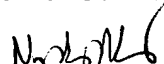
5. Regarding claim 5, Ogino teaches claim 4, and further teaches the fading pitch calculating in linear form (see for example, paragraph [0041], equation (1), and lines 19-30).
6. Regarding claims 4, and 8, Ogino teaches claims 3 and 7, and further teaches the controller (Figure 7, element 103) operates intermittently under the control of the fading pitch circuit (Figure 6, element 112, and paragraph [0041], lines 42-45) and the fading pitch estimation is calculated based upon the synthesizer (104) output time (seer for example, paragraph [0041], lines 45-45, and paragraph [0038], lines 1-15).
7. Regarding claim 10, Ogino teaches claim 7, and further teaches a mobile information terminal comprising the fading pitch detection (paragraph [0013], lines 1-5; paragraph [0020], lines 1-5; paragraph [0023], lines 1-5).


### **Conclusion**

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure
2. Yamamoto, Receiving Apparatus and Communications Apparatus.
3. Nakano, Spreading Spectrum Receiver for use in Communication Systems.

### **Inquiry**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 703-305-8723. The examiner can normally be reached on 7:00 AM -5:00 PM.  
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service telephone number is 703-305-3900.

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**

  
Shaima Q. Aminzay  
(Examiner)

\_\_\_\_\_  
Nay Maung  
(SPE)  
Art Unit 2684

March 2, 2004